

Application Number 10/528977
Response to Office Action dated 04/09/2007

REMARKS

Applicants amend claim 1 and add claims 12-16. In amending claim 1 and adding claims 12-16, Applicants have not added new matter. Support in the originally filed specification for an actuator moving the second holding frame independently of moving the first holding frame within the cam grooves of the tubular cam frame is given on page 29, lines 3-12. Support for new claims 12- 16 is given on pages 25, line 26 through page 29, line 13; support for the description of the rod-like guide members of claims 12 and 13 is given on page 14, lines 17-32; support for the actuators provided on the image blurring correcting device of claims 14-16 is given on page 18, line 21 through page 21, line 8. Claims 1-16 are pending.

Claims 1 and 8-9 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6434331 to Araoka et al. (Araoka '331). Applicants traverse the rejection because Araoka '331 does not teach or suggest an actuator operable to move the second holding frame independently from a movement of the first holding frame by the cam grooves of the tubular cam frame, as required by claim 1

Araoka '331, on the other hand, repeatedly states that the "cam frame serves as a moving mechanism for moving the first, second, third, and fourth lens frames " (column 4, lines 23-24); and "[t]he first lens frame is therefore moved by a predetermined distance in the optical-axis directions along with the rotation of the cam frame" (column 5, lines 31-33). With respect to the second lens frame, Araoka '331 teaches that "[t]he second lens frame can therefore move by a predetermined distance only in the optical - axis directions along with the rotation of the cam frame" (column 6, lines 21-24); and "[t]he cam grooves cause the movable frames such as the first, second, third, and fourth lens frames and the S frame to move by predetermined distances in the optical-axis directions" (column 9, lines 1-4). Thus, Applicants request the Examiner to withdraw the rejection of claims 1, 8 and 9 as being anticipated by Araoka '331. Claims 8 and 9 are also not anticipated by Araoka '331 at least by virtue of their dependence upon claim 1. Applicants do not concede the correctness of the rejection.

Claims 1-11 are rejected under 35 U.S.C. §102(a) as being anticipated by Japanese Patent 10-197775 to Yugi et al. (Yugi '775). The rejection states that in FIG. 5 of Yugi '775 shows an actuator 17/22 for moving the second holding frame. Applicants

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disagree. Yugi '775 in ¶[0018 – translation provided] specifically provides that “the second holding frame 2 is moved in the optical axis direction by a driving force of a driving motor 11 via a feed screw (not shown)” and that the driving motor 11 is fixed to a master flange 5 in FIGs. 1-3 and 6-8. Thus, the actuator associated with elements 17 and 22 do not move the second holding frame, as required by claim 1. Claim 1, moreover, requires that the actuator that moves the second holding frame be attached to a tubular cam frame including a plurality of cam grooves. The driving motor 11 of Yugi '775 is clearly not attached to a tubular cam frame, as required by claim 1. Claims 2-11 are also not anticipated by Yugi '775 at least by virtue of their dependence upon claim 1. Applicants do not concede the correctness of the rejection, but rather request the Examiner withdraw the rejection of claims 1-11 as being anticipated by Yugi '775.

Neither Yugi '775 nor Araoka '331 teach or suggest two rod-like guide members that are slidable with respect to the second holding frame and the image blurring correcting device upon movement of the first holding frame, as required by new claim 12. Applicants request the Examiner allow not only new claims 12-16, but also 1-11. Should any minor issues remain, the Examiner is asked to telephone the primary attorney below to facilitate a prompt examination and allowance.

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PATENT TRADEMARK OFFICE

Dated: July 9, 2007

Respectfully submitted,

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T-420 P.018/019 F-999

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Partial Translation of
JP 10(1998)-197775 A

Publication Date : July 31, 1998

5 Application No. : 9(1997)-267

Application Date : January 6, 1997

Applicant : Matsushita Electric Industrial Co., Ltd.

10 Title of the Invention : COLLAPSIBLE LENS BARREL AND OPTICAL
INSTRUMENT USING THE SAME

Translation of paragraphs [0017] to [0018]

[0017]

15 [Modes for Carrying Out the Invention]

A collapsible lens barrel and an optical instrument using the same according to the first embodiment of the present invention are described with reference to FIGS. 1 and 2. L1 is a first lens group that is fixed at the time of image capturing, L2 is a second lens group used for zooming, L3 is a
20 third lens group that is fixed at the time of image capturing and L4 is a fourth lens group that moves along an optical axis when correcting an image plane fluctuation due to zooming and achieving focus.

[0018]

25 Numeral 1 denotes a first holding frame for holding the first lens group L1. One end of each of two guide poles (guide members) 7 is fixed to the first holding frame 1. In a lens barrel generally used for video movies, the first lens group L1 has a largest diameter among others. Accordingly, one end of the guide pole 7 is fixed to a position equivalent to a position of an outermost diameter of the first lens group L1 or a position closer to the
30 center of the optical axis, thereby minimizing the increased amount of the outer diameter of the lens barrel that is increased owing to its collapsible structure. Numeral 2 denotes a second holding frame that holds the second lens group L2 and is movable in the optical axis direction along the two guide poles 7. Moreover, the second holding frame 2 is moved in the optical
35 axis direction by a driving force of a driving motor 11 via a feed screw (not shown) and performs zooming. Numeral 3 denotes a fixed third holding

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frame that holds the third lens group L3 and is fixed in such a manner as to be interposed between a body 6 and a master flange (fixed barrel) 5.

Numeral 4 denotes a fourth holding frame that holds the fourth lens group L4 and is movable in the optical axis direction along two guide poles 8 held between the third holding frame 3 and the master flange 5. Moreover, the fourth holding frame 4 is moved in the optical axis direction by a driving force of a driving motor 12 via a feed screw (not shown), thus correcting the image plane fluctuation due to zooming and achieving focus. Numeral 13 denotes an imaging element fixed to the master flange 5. Numeral 14 denotes a diaphragm unit.
